

REMARKS

By this Amendment, Applicants have amended claims 14, 25, and 27 to more appropriately define the claimed invention. Upon entry of this Amendment, claims 14-22 and 25-35 remain pending and under examination. For the reasons presented herein, Applicants traverse the rejections set forth in the Final Office Action¹, wherein the Examiner:

- (a) responded to Applicants' previous arguments in a section entitled "Response to Arguments";
- (b) rejected claims 14 and 27 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,689,616 ("Li") in view of U.S. Patent No. 5,924,065 ("Eberman");
- (c) rejected claims 15-17, 25, and 28-30 under 35 U.S.C. § 103(a) as being unpatentable over Li in view of Eberman as applied to claim 14, and further in view of U.S. Patent No. 4,379,949 ("Chen");
- (d) rejected claims 18, 19, 31, and 32 under 35 U.S.C. § 103(a) as being unpatentable over Li in view of Eberman and Chen as applied to claim 15, and further in view of U.S. Patent No. 6,064,958 ("Takahashi");
- (e) rejected claims 20 and 33 under 35 U.S.C. § 103(a) as being unpatentable over Li in view of Eberman and Chen as applied to claim 15, and further in view of U.S. Patent No. 6,801,895 ("Huang");
- (f) rejected claim 26 under 35 U.S.C. § 103(a) as being unpatentable over Li in view of Eberman and Chen as applied to claim 25, and further in view of U.S. Patent No. 6,118,392 ("Levine"); and
- (g) objected to claims 21, 22, 34, and 35 as being dependent upon a rejected base claim, but indicated that they would be allowable if rewritten in independent form including all the limitations of the base claim and any intervening claim.

¹ The Final Office Action contains statements characterizing the related art and the claims. Regardless of whether any such statements are specifically identified herein, Applicants decline to automatically subscribe to any statements in the Final Office Action.

Rejection of Claims 14 and 27 under 35 U.S.C. § 103(a):

Applicants request reconsideration and withdrawal of the rejection of claims 14 and 27 under 35 U.S.C. § 103(a) as being unpatentable over Li in view of Eberman.

The Examiner has not properly resolved the *Graham* factual inquiries, the proper resolution of which is the requirement for establishing a framework for an objective obviousness analysis. See M.P.E.P. § 2141(II), citing to *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), as reiterated by the U.S. Supreme Court in *KSR International Co. v. Teleflex Inc.*, 550 U.S. ___, 82 USPQ2d 1385 (2007).

In particular, the Examiner has not properly determined the scope and content of the prior art. Specifically, Li in view of Eberman does not teach or suggest what the Examiner attributes to them. In addition, the Examiner has not properly ascertained the differences between the claimed invention and the prior art, at least because he has not interpreted the prior art and considered both the invention and the prior art as a whole. See M.P.E.P. § 2141(II)(B).

Li and Eberman, taken alone or in combination, do not teach or suggest at least Applicants' claimed "first evaluating a distance between non-consecutive frames; then selectively skipping a run of the neural network in correspondence to at least one frame between said non-consecutive frames" (claims 14 and 27).

The Examiner alleged that Li and Eberman disclose all the elements of claims 14 and 27. See Final Office Action, pp. 5-6. Moreover, in the "Response to Arguments" section, the Examiner specifically alleged that "Li teaches discarding frames that 'exceed a specific threshold distance' before moving on to the next frame." Final Office Action, p. 4. The Examiner further alleged that:

[i]f a frame is discarded because the threshold distance is exceeded during the nearest neighbor operation, then it, therefore, cannot be analyzed by the neural network operation, which means that for that frame ("in correspondence to at least one frame") there is no neural network operation ("run") and therefore, the neural network operation is "skipped". As long as there are at least two frames which are not discarded existing with at least one discarded frame between them, then the limitation "between said non-consecutive frames" is read on.
Final Office Action, p. 4.

As explained in Li, col. 6 line 64 to col. 7, line 10, however, Li proceeds by considering the distance between consecutive frames. Li teaches "a determination that the distance to a frame under consideration from an adjacent frame does not exceed a specific threshold distance causes the frame to be discarded, and the next adjacent frame to thus be considered." Li, col. 6, line 64 to col. 7, line 1. Therefore, Li teaches consideration of the distance between consecutive frames and selectively skipping frames. In order to consider the distance between adjacent frames, each of the adjacent frames must be analyzed by the neural network. Then, adjacent frames can be considered, and if the distance between adjacent frames does not exceed a threshold, a frame can be discarded (*i.e.*, not saved). In contrast, Applicants' claims 14 and 27 recite:

... first evaluating a distance between non-consecutive frames; then selectively skipping a run of the neural network in correspondence to at least one frame between said non-consecutive frames; and calculating said distance as a distance between output likelihoods of said neural network, (emphases added).

The Examiner has mischaracterized the cited prior art in asserting that "[i]f a frame is discarded because the threshold distance is exceeded during the nearest neighbor operation, then it, therefore, cannot be analyzed by the neural network

operation.” Final Office Action, p. 4. Contrary to the Examiner’s assertions, the frame must be analyzed by the neural network before the distance between adjacent frames can be analyzed.

In addition to the arguments presented above, Applicants note that it appears that a central assertion by Examiner is that “[a]s long as there are at least two frames which are not discarded existing with at least one discarded frame between them, then the limitation ‘between said non-consecutive frames’ is read on.” Final Office Action, p. 4. The Examiner appears to allege that by proceeding, as taught by Li, to sequentially evaluate adjacent frames, and to discard some frames while not discarding other frames, a situation may arise in which there are two non-discarded frames with discarded frames between them. The Examiner thus appears to allege that two non-discarded frames, with discarded frames between them, reads on the claimed “evaluating a distance between non-consecutive frames.” In response, Applicants have amended claims 17 and 27 to recite the order in which the claimed steps are performed, that is, “first evaluating a distance between non-consecutive frames; then selectively skipping a run of the neural network in correspondence to at least one frame between said non-consecutive frames.” Applicants submit that independent claims 14 and 27 do not read on Li and Eberman, whether these references are taken alone or in combination.

As demonstrated above, Applicants respectfully assert that the Examiner has neither properly determined the scope and content of the prior art nor properly ascertained the differences between the prior art and the claimed invention. In view of the reasoning presented above, Applicants therefore submit that independent claims 14 and 27 are not obvious over Li in view of Eberman, whether taken alone or in

combination. Independent claims 14 and 27 should therefore be allowable.

Accordingly, Applicants request withdrawal of the 35 U.S.C. § 103(a) rejection.

Rejection of Claim 25 under 35 U.S.C. § 103(a):

Applicants request reconsideration and withdrawal of the rejection of claim 25 under 35 U.S.C. § 103(a) as being unpatentable over Li in view of Eberman, and further in view of Chen.

Independent claim 25, while of different scope, contains recitations similar to those in claim 14, and should be allowable for the same reasons discussed in the previous section with respect to claim 14. That is, Li in view of Eberman and Chen, whether taken alone or in combination, fails to teach or suggest at least Applicants' claimed:

. . . a distance evaluation unit for calculating a distance between a first and a second likelihood, said first and second likelihoods being obtained by means of said neural network and corresponding to a first and a second non-consecutive buffered frames . . .
skipping a run of the neural network corresponding to the frame or frames between said first and second non-consecutive frames, . . . , as recited in claim 25.

For the same reason as presented in the previous section, Li and Eberman fail to teach or suggest at least these recitations of claim 25. Moreover, Chen, taken alone or in combination with Li and Eberman, also fails to teach or suggest at least these recitations. Therefore, Chen fails to cure the deficiencies of Li and Eberman previously discussed.

For at least the above reasons, Applicants' independent claim 25 should therefore be allowable. Applicants therefore respectfully request withdrawal of this 35 U.S.C. § 103(a) rejection.

Remaining 35 U.S.C. § 103(a) Rejections of Claims 15-20, 26, and 28-33:

Applicants request reconsideration and withdrawal of the remaining rejections of claims 15-20, 26, and 28-33 under 35 U.S.C. § 103(a) as being unpatentable over Li in view of Eberman, and further in view of one or more of Chen, Takahashi, Huang, and Levine.

As discussed above, Li in view of Eberman and Chen does not render obvious Applicants' independent claims 14, 25, and 27. The additional cited references, Takahashi, Huang, and Levine, taken alone or in combination with Li, Eberman, or Chen, also fail to disclose or suggest at least Applicants' claimed method of executing a neural network that comprises, in part, "first evaluating a distance between non-consecutive frames; then selectively skipping a run of the neural network in correspondence to at least one frame between said non-consecutive frames; and calculating [a] distance as a distance between output likelihoods of said neural network," as recited in claim 14 and 27 (and similarly in claim 25). These references thus fail to cure the deficiencies of Li, Eberman, and Chen previously discussed.

For at least the above reasons, Applicants' dependent claims 15-20, 26, and 28-33 should therefore be allowable at least due to their respective dependence from base claim 14, 25, or 27. Applicants therefore respectfully request withdrawal of the remaining 35 U.S.C. § 103(a) rejections.

Conclusion

Applicants request reconsideration of the application and withdrawal of the rejections. Pending claims 14-22 and 25-35 are in condition for allowance, and Applicants request a favorable action.

If there are any remaining issues or misunderstandings, Applicants request the Examiner telephone the undersigned representative to discuss them.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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